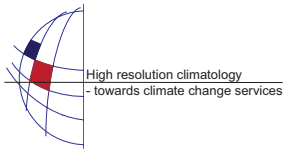
EMS Annual Meeting Abstracts
Vol. 7, EMS2010-372, 2010
10th EMS / 8th ECAC



Probabilistic projections of mean and variance evolution for temperatures. Application for extremes analysis.

M. Pausader (1), D. Bernie (2), S. Parey (1), and M. Nogaj (1)
(1) EDF, R&D, CHATOU, France (sylvie.parey@edf.fr), (2) Met Office Hadley Centre, FitzRoy road, Exeter, UK

There is a growing demand from the climate impacts research community to quantify as much as possible the uncertainties of climate change projections. This paper presents a methodology for taking into account both model and parameter uncertainty, using both multi-model ensemble projections and perturbed physics ensemble projections. The aim is to combine these two sources of uncertainties so as to obtain a better representation of total uncertainty. This methodology is then applied to compute probabilistic projections of mean and variance evolutions of daily maximum temperatures, which allows us to calculate probabilities of return levels of extremely high temperatures, assuming the stationarity of the scaled distribution of extremes (K-hypothesis) as used in Parey et al. “The assessment of future extremes of air temperature to design EPR type power plants” proposed in this same session.